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4. Document Date: Oct 15, 1965	5. Summary (2-3 lines indicating the major subject(s) of the document): Transmit 4 copies of the minutes of the SNAPTRAN-2 coordination meeting, Oct 11, 1965.			
6. Name and telephone number of person completing form: Burton R. Baldwin (208) 525-0203	7. Organization: Lockheed Idaho Technologies Co.	8. Date: March 23, 1995		

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Ny-242-65A

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ITEMS OF INTEREST:



PHILLIPS PETROLEUM COMPANY
IDAHO FALLS, IDAHO 83401

RESEARCH AND DEVELOPMENT DEPARTMENT
ATOMIC ENERGY DIVISION

October 15, 1965

OCT 22 1965

By Moran
Bill Hamill
Why wasn't he
represented at
meeting?

Transmittal of SNAPTRAN-2
Meeting Minutes
Ny-242-65A

Mr. J. F. Kaufmann
Technical Operations
Idaho Operations Office
U. S. Atomic Energy Commission
Idaho Falls, Idaho

Dear Mr. Kaufmann:

Transmitted herewith are four copies of the minutes of the SNAPTRAN-2 coordination meeting held at the NRTS on October 11, 1965.

Very truly yours,

WENyer:jan

W. E. Meyer
Assistant Manager
Nuclear Safety Technology
Atomic Energy Division

cc: w/attachment

Mr. J. F. Kaufmann - 4
Mr. H. G. Hembree - 2 DRT
Mr. J. C. Sherman - CPAO
Mr. W. V. Geer - 2 LASL
Mr. D. G. Kitzinger Sandia Corp.
Mr. H. L. Smith - 2 EG & G
Mr. R. L. Detterman 2 AI
Mr. J. C. Tsitouras EG & G
Mr. R. J. Schirk - AEC-ID
Mr. M. J. Tupper - AEC-ID
Mr. R. P. Johnson - AI
Mr. L. I. Moss - AI
Mr. J. P. Lyon - PPCo

REPOSITORY INEL
COLLECTION SNAPTRAN
22305, FRC# 430 78 0073
BOX No. FILE: SNAPTRAN 1965
TRANSMITTAL OF SNAPTRAN-2
FOLDER MEETING MINUTES NY-242-65A

Minutes of SNAPTRAN-2 Coordination Meeting

The meeting, chaired by F. L. Bentzen, was held at NRTS on October 11, 1965. Lists of attendees and agenda are attached.

I. Schedule

Phillips Petroleum Company commented briefly on the present schedule indicating the work necessary to complete the preparations for the SNAPTRAN-2 destructive test. The flash lamp interference tests, mechanical checkout of the control system and the shake tests have been completed. The main problem remaining is synchronization of the impulse drum movement.

The static physics tests are expected to be completed by October 29, 1965, calibration transients by November 5, and the EG & G hook-up by November 10. Three days of trial runs are scheduled for November 10, 11, and 12. The machine is expected to be ready for the destructive test any time after November 12. *date being aimed at 11/15*

Pertinent comments made in discussions concerning the schedule are given below. EG & G stated that they could see no visible evidence of any disturbance due to reactor shaking on the 1000 psi test. Final determination of shake effects will depend on film analysis.

Discussions followed on synchronization of drum movement required to insure a predictable reactivity insertion. Phillips Petroleum Company feels it is necessary to weld the coupling clutch together to insure proper synchronization. AI stated that they felt welding would not aid significantly since the coupling chain will yield with only a 50% increase in force over that exerted by the coupling clutch. Phillips requested AI to determine if additional 1000 psi checkout tests could be performed without risking damage to the machine. AI agreed to check with their stress analysis people to determine how many, if any, additional 1000 psi impulse tests could be run. If more tests can be run, Phillips will schedule them into the test program just prior to the destructive test. Within the limits of the answer to the number of tests permitted, Phillips will run three consecutive tests, varying the time constant of the delay circuit to obtain no greater than 2 millisecond drum separation time in order to minimize the load on the coupling chain. Following this, the coupling clutch will be welded.

II. Measurements

Phillips stated that an intolerable level of interference existed at the initial checkout of the EG & G flash lamps. This was found to be due to a circulating ground current problem. Approximately fifty EM tests have been run in the course of determining the sources of the interference and the necessary corrections. The interference has been reduced to a pulse having a width and amplitude which would not interfere with the data analysis if the pulse were to occur at the time of peak power. Oscillographic traces showing the levels of interference which presently exist in the system were available for inspection by attendees. Checks will be made on the final dry run to insure no adverse changes in interference levels have occurred. The excellent cooperation by EG & G in solving the interference problem was noted.

Phillips summarized the instrumentation to be used during the SNAPTRAN-2 destructive test as outlined in the letter to the instrumentation sub-committee. A brief discussion followed with all parties in concurrence as to the measurements to be made. AI requested that particular emphasis be given to protection of nuclear data on the back side of the power burst. They also requested that EG & G use as the criterion for timing that the trigger signal be set at a point estimated to be 1 millisecond before the center fuel temperature reaches 2000°F.

EG & G gave a brief discussion of the measurements that they intend to make and the procedures that they would follow. The Health Physics personnel of Phillips Petroleum Company outlined the radiological measurements to be made. They are essentially those made on the SNAPTRAN-3 destructive test, but are more complete and also include a vertical cloud profile measurement. LASL then discussed the measurements that they would make and the use that these data would be put to in their program.

EG & G asked if any smoke and vapor problem would exist from heating the LASL capsules. Upon learning that the temperatures reached by the grid plate during the time of photography would be low, EG & G requested that the grid plates be painted a flat white to improve picture taking quality. Discussions of the proper paints and associated problems followed and it was agreed that Phillips would undertake such painting.

EG & G also mentioned the problem that they are experiencing with radiation shielding of their cameras. The expected neutron dose has been found to be three times the original maximum prediction. EG & G personnel are investigating this problem and will submit requests for appropriate shielding to Phillips. Installation of this shielding is not expected to result in any schedule perturbations.

III. Test Predictions

AI gave a brief description of the model used in computer predictions of the SNAPTRAN-2 test results. AI uses a spherical geometry in their model analysis. Phillips Petroleum then outlined the model that they have been using for their destructive calculations. Their approach is the same except for the use of cylindrical geometry. The variation of parameters by both companies lead to very small differences in the predicted results. Both Predictions show an expected total energy release of between 60 and 70 megawatt-seconds.

IV. Test Initiation

Considerable discussion was carried out concerning the mode of initiations for the destructive test. Both AI and Phillips listed their criteria for insertion of reactivity. AI stated that their criteria is to maximize a reactivity insertion with no attempt to obtain an asymptotic period. Phillips Petroleum Company felt that this would not allow proper separation of the parameters affecting the reactivity behavior and that an asymptotic measurement is desirable. Phillips indicated the reactivity insertion recommended by AI was not feasible. The differences were felt to be due to different assumptions of drum travel time behavior. It was agreed that further calculations would be made using the following criteria. The starting power would be 0.1 milliwatts and all possible reactivity would be inserted before a temperature rise of 30°F has occurred. AI will provide Phillips with the results of their calculations by October 18, 1965.

V. Data Handling

Procedures for handling the data following the SNAPTRAN-2 destructive test were then outlined by Phillips Petroleum Company. Two transports of data containing a summary of test information will be digitized immediately after the test and made available to AI personnel. Phillips indicated that all data should be available to AI personnel within two or three working days after the destructive test. Phillips expects to have a draft of their data report ready for comments by AI by April 1, 1966.

Action Items

The following action items were agreed upon.

1. AI will check with their stress analysis people to ascertain if further 1000 psi impulse tests can be performed. If such tests can be performed, Phillips will then insert these into the test program just prior to the destructive test. Within the limits of the number of tests that can be performed to the first part, Phillips will run three consecutive tests having no greater than two millisecond drum separation. Following this, Phillips will weld the coupling clutch.

2. PPCo will paint the top of the upper grid with flat white paint and if feasible will also paint the bottom of the bottom grid.

3. EG & G will make appropriate shielding changes as a result of present investigations. Shielding must be in place by October 29, 1965, if no schedule interference is to occur.

4. AI will provide results and recommendations pertaining to the shimming of the impulse drums for the destructive test by October 18, 1965, using the criteria established during the meeting.

5. IDO will provide Phillips and AI with a rough draft of the press release pertaining to the destructive tests by November 1, 1965.

Attendees
SNAPTRAN II Meeting

October 11, 1965

F. L. Bentzen	PPCo
V. T. Berta	"
G. E. Bingham	"
G. F. Brockett	"
J. R. Fielding	"
D. B. Hagman	"
R. B. Johns	"
W. E. Kessler	"
B. C. Laney	"
W. J. Neal	"
R. E. Prael	"
R. P. Rose	"
D. R. Schuyler	"
D. A. Watson	"
J. F. Jackson	AI
R. P. Johnson	"
L. I. Moss	"
H. L. Smith	EG & G
J. C. Tsitouras	"
W. U. Geer	LASL
D. G. Kitzinger	Sandia Corp.
R. J. Schirk	AEC-ID
M. J. Tupper	"
J. C. Sherwin	AEC-CPAO

October 11, 1965

V.	Data Handling	PPC
		AI
		EG&G